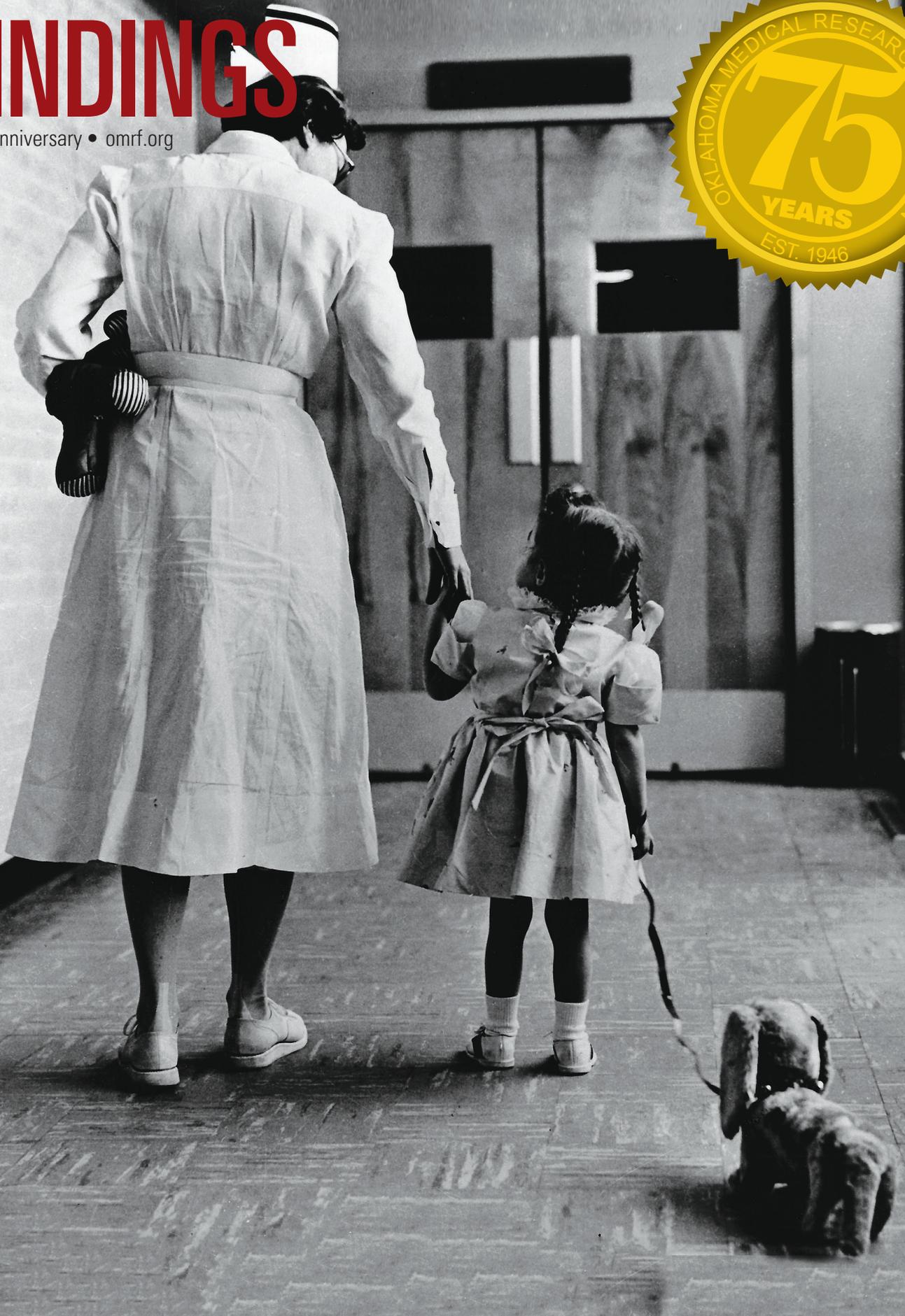


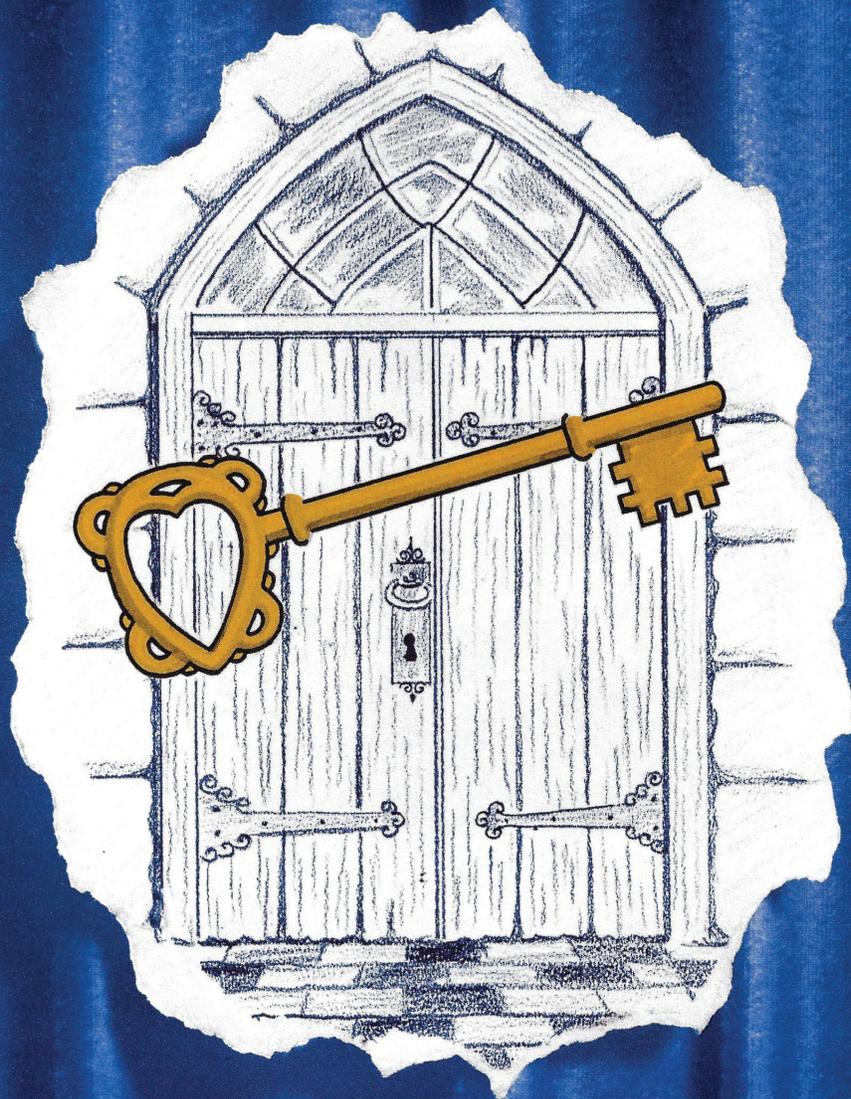
# FINDINGS

75th Anniversary • [omrf.org](http://omrf.org)



**Special anniversary issue!**

# THE KEY

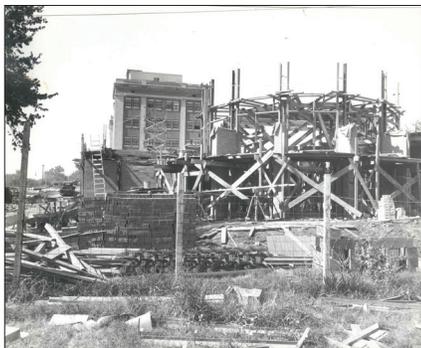
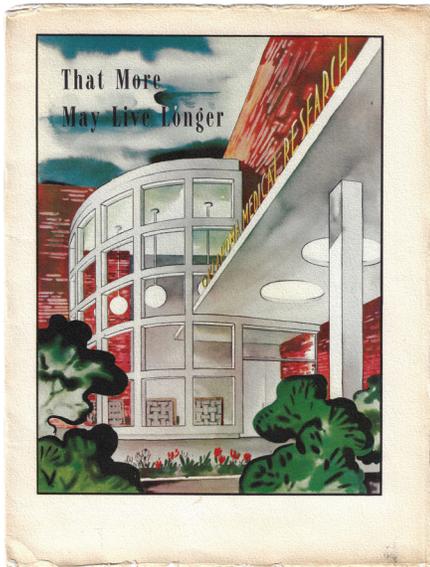


1949

OMRF  
FUNDRAISING  
BROCHURE

to Unsolved  
Medical Mysteries

# 75th Anniversary PRESIDENT'S LETTER



Chartered in 1946, OMRF is an independent, nonprofit biomedical research institute dedicated to understanding and developing more effective treatments for human disease. Its scientists focus on such critical research areas as cancer, diseases of aging, lupus and cardiovascular disease.

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On the cover: OMRF research hospital head nurse  
Marian McAuley walks with a young patient in 1955.  
P. 15: Greg Burns photo by Doug Hoke/The Oklahoman

**F**OR A YOUNG STATE, Oklahoma was well ahead of its time. In 1946, awash in post-war optimism, a group of the state's leading citizens came together to vanquish a foe that still remained: disease. They formed an independent biomedical research institute, one of only a handful of such organizations then in existence. They assigned the Oklahoma Medical Research Foundation the mission of "conducting scientific investigations in medicine."

Over the years, OMRF's communications teams have reshaped this lawyerly prose into more PR-friendly catchphrases. First, there was "... That more may live longer, healthier lives." Then, "A cure is out there." And, most recently, "Discoveries that make a difference."

While the verbiage may have morphed, the aim has not. And in three-quarters of a century, OMRF scientists have made remarkable progress in improving not only our understanding but also our treatment of diseases.

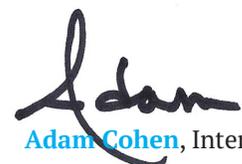
In this special issue of Findings, we'll take a walk down memory lane. Specifically, we're looking at how OMRF grew from an idea into a thriving research institute, one that today counts 450 staff members, thousands of patients, more than 50 research labs, and an annual budget of \$100 million.

Those are numbers, and you'll find plenty of them in this issue. But we're also trying to capture the spirit of OMRF and the people who have made this institution special. Whether you flip through the pages or scour every word, we hope you'll get a sense of the many ways the foundation has enriched Oklahoma and the world.

As you read, remember that, unlike many of the 80 or so other independent research institutes now spread across the U.S., OMRF is not the product of a single benefactor's fortune. We were born from the generosity of an entire state. It's that same broad base of support that keeps fueling our work today.

So, take pride in every discovery, in every life improved by work in OMRF's labs or clinics. Because our achievements are your achievements. And we couldn't be more grateful that you've chosen to join us in the battle against human disease.



  
Adam Cohen, Interim President

The  
1940s



Foundation and state officials held a ceremony to commemorate the acceptance of the land deed for OMRF on Oct. 3, 1947.

## A Dream Becomes Reality

Like every institution, OMRF began as an idea.

“While the world was still engaged in a war of destruction,” explains an early fundraising brochure, a group of University of Oklahoma College of Medicine faculty and alumni “were dreaming of a world in which medical advances would alleviate pain and disease.” That dream was set to paper when 30 Oklahoma physicians and civic leaders signed the charter of a nonprofit corporation that would be called the Oklahoma Medical Research Foundation. On Aug. 28, 1946, the Secretary of State of Oklahoma granted that charter, and OMRF was born.

The new organization would conduct “scientific investigations in the field of medical research to attack killing and crippling diseases about which little is known by science.” Its founders saw research as an important investment – “Not a charity, not a philanthropy, but Oklahoma’s greatest gift to ourselves and humanity.”

The state legislature provided a site for the foundation, unanimously granting it a parcel of land on Northeast 13th Street in Oklahoma City. Statewide awareness and fundraising campaigns followed.

Gov. Roy J. Turner declared the first week in May of 1947 Research

Week, which saw a dozen nationally prominent out-of-state scientists canvas Oklahoma to trumpet the value of medical research and the nascent foundation. In seven days, advocates held 137 meetings in 42 cities across the state.

Those efforts yielded a series of statewide radio broadcasts (remember, this was 1947) and more than 100 newspaper articles. That publicity laid the groundwork for a series of fundraising campaigns, with targeted initiatives directed at health care professionals such as doctors and nurses. To make appeals to the general public, a committee divided the state into 25 districts, with local captains appointed to lead each. They received help from national celebrities including Sherman Billingsley, an Oklahoma native and owner of New York’s famed Stork Club; Walter Winchell, the leading radio commentator of his day; and World War II hero and movie star Audie Murphy. (A portion of the proceeds of his film “Bad Boy” went to OMRF.)

All told, the campaigns generated more than \$2 million in gifts and pledges — the smallest, 30 cents, to the largest, \$26,000 — from 7,500 Oklahomans. In 1949, with the bold promise “That more may live longer,” construction of the new foundation’s campus began.





Gov. Roy Turner greets Alexander Fleming on his arrival to Oklahoma City.

## ‘A frightful gamble’

“Here today in Oklahoma City, you are giving birth to a new medical research foundation. Who knows what it is going to bring forth? You might call it a frightful gamble, just as it is a gamble when a baby is born into this world, or when a bore is sunk for oil. But the results of the work done here may prove a thousand times more valuable to humanity than all the oil in Oklahoma.

When people are planning new research institutes, there is a tendency to put a large part of the funds to ornamentalations so that when it is shown off to visitors, they will comment on the gorgeous building. But real researchers do not wish to work in marble halls.

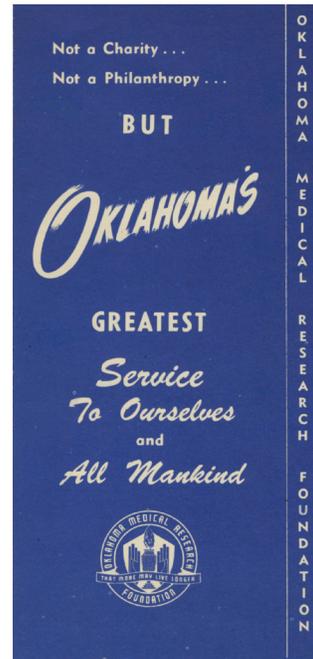
My own laboratory was described in an American paper a year or two ago as resembling the back room of an old-fashioned drug store. But I would not change it for a gorgeous suite.

For the research worker, there is no joy equal to that of a discovery, however small and unimportant. That is what keeps the true research worker going. The glory of a good bit of work is that it paves the way for a further advance which may lead to its own eclipse.

Before I sit down, I would like to hand over to the medical research foundation this small culture of the original penicillin, which was the beginning of penicillin research. How this mold came to me and where it came from, no one knows. And when it came I did not want it. But it has fulfilled its purpose.

This small memento may serve as a reminder to the research workers that there is a divine power which may direct them into the true path.”

*Sir Alexander Fleming  
Discoverer of penicillin  
Condensed from a speech at OMRF’s dedication ceremony  
July 3, 1949*



“No one has a lease on life,” read a 1947 fundraising brochure. “Research is an investment, not a charity!”



Construction of OMRF’s campus began in 1949.



Grace Marlow and her husband, George, became the first “big-gift contributors” to OMRF when they donated \$26,000 in 1947 in memory of their late son. “This is one of the finest things we of Oklahoma ever have attempted,” Grace said. “Such a wonderful movement cannot fail!”



## Opening the Doors



More than 4,000 guests attended OMRF's inaugural open house in 1950.



### Pulling No Punches

OMRF received a portion of the proceeds when Sugar Ray Robinson fought in Oklahoma City in 1951. Taking in a donation of \$5,000, the foundation fared better than the middleweight champ's opponent, who went down in a first-round knockout.

Construction of OMRF's first research labs wrapped up in the fall of 1950, and the foundation christened the facility with an open house that welcomed 4,000 visitors. "Areas drawing particular interest included the system of tunnels, the radio-isotope laboratory, the controlled temperature lab, a display of scientific equipment, the animal wing and its first 'occupants,' a colony of white rats," crowed an early OMRF newsletter. Visitors "were interested in the new lobby furniture and draperies, as well as the modern architecture in the lobby."

The building initially housed 11 laboratories and administrative offices, along with a floor of shelled space for eventual expansion. Within the next year, thanks to a grant from the National Institutes of Health, OMRF opened a 16-bed research hospital.

The foundation recruited researchers from throughout the U.S. – and beyond. OMRF "is contributing mightily to the medical sciences of the world," explained a fundraising proposal, "not only in productive research but in the training of devoted young men and women from countries around the world who are dedicating

their lives to medical research." An accompanying photo showed scientists from Argentina, Jordan, Denmark, Iran and, from China, a pair of laboratory technicians: Kuen Tang and her husband, Jordan, who would go on to become perhaps the best-known and best-loved scientist in the foundation's history.

Research initiatives first specialized in cancer, heart disease and metabolic disorders, the program that hired Dr. Mary Carpenter as OMRF's first female principal investigator in 1954. These "basic" research programs paired with clinical studies in the research hospital, where nurses and physicians treated some of Oklahoma's sickest patients with experimental therapies. Soon, the research hospital became internationally recognized for its work with childhood cancers.

"I was a patient in your research hospital as a teenager in the 1950s," wrote Huguette White in 2005, "and I wanted to tell you that I still consider OMRF to be my home." A native of Lebanon, White traveled to the foundation for treatment of her Ewing's sarcoma, a rare and deadly bone cancer. "I know I wouldn't be here now if OMRF hadn't been there to take care of me."



OMRF's research hospital became internationally known for its work on childhood cancers. Huguette White traveled more than 6,000 miles for treatment of a rare bone cancer in 1954.



"The Oklahoma Medical Research Foundation was conceived by the people of this state, built by them, and is now working to fulfill their hope of aiding all mankind in the constant battle against human ailments," read a brochure from 1950. "What is accomplished here will belong to all the people. What progress and medicine is achieved within this structure will be shown in longer, healthier and happier lives for all!"

## 'I watched them build this building.'



"My parents had seven sons, followed by seven daughters. I was born on our farm outside Stroud, the baby of the family – the number 14 child. Mama called me 'the last button on Gabriel's coat.'

I watched them build this building. 'Lord,' I said, 'send me somewhere that I can keep my temper.' And He sent me here.

My first day of work at OMRF was September 16, 1952, in the research hospital. I brought the patients their meals from University Hospital on a cart through the tunnel under 13th Street. We had about 20 employees when I came to work here. And they all wanted to be in charge.

OMRF was segregated in the '50s. It was a reflection of the times. The Black employees weren't allowed to participate in parties. We had to eat at a different time than the white employees in the cafeteria. That gradually changed, but I still remember it well.

We always had a Christmas tree in the clinic for the patients and staff. Every year I'd crawl under that tree and peek at my gift. One year while I was under there, the tree fell on me. I was yelling, 'Help me, help me!' and everybody came running. So, I got found out!

My first paycheck was for \$125. I thought I was rich. I had never been paid more than \$90 a month before that. It would go a long way in those days.

My favorite memory would be my patients. I loved them. I cried when they closed the hospital like it was mine."

Janet Lawrence (front row, left)  
OMRF employee, 1952-2005  
Condensed from a 2005 interview

# THE 1960s



In the '60s, volunteers collected donations for OMRF at high school and college football and basketball games around the state.

## All Hands on Deck

OMRF kicked off the decade with a liberating milestone, retiring the mortgage for construction of the foundation. Tulsa oilman and philanthropist John Mabee donated \$150,000 to pay off the debt. That major gift would prove the first of many from the fortunes of Mabee and his wife, Lottie, whose namesake foundation has since donated more than \$4.8 million to brick-and-mortar projects at OMRF.

Despite the retirement of OMRF's initial mortgage, the 1960s dawned with no shortage of financial uncertainty for the young foundation. With OMRF having grown to 140 employees, Executive Vice President Hugh Payne reported to the board of directors that "by the skin of our teeth, we are making the payroll and paying invoices." Thanks to studies in breast cancer and leukemia, cholesterol, and the effects of stress on any number of physical conditions, OMRF scientists

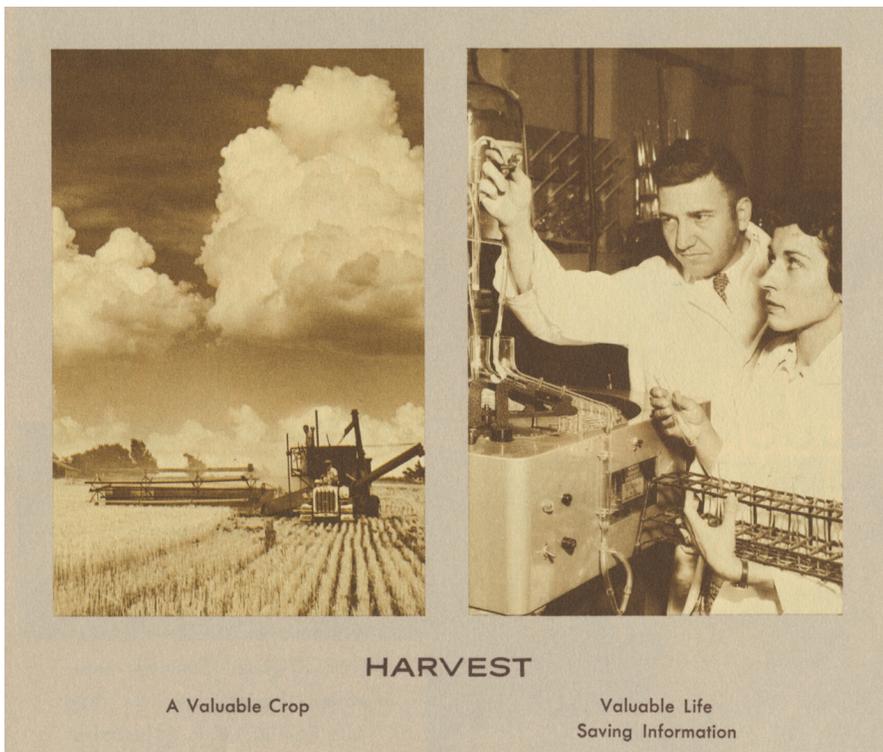
were now securing competitive research grants from the National Institutes of Health, American Cancer Society, American Heart Association and other funders. But these grants only covered a portion of OMRF's operating costs, which now totaled almost \$1 million annually. This left Payne and his staff to raise the balance through a series of campaigns targeted to different professions – bankers, dentists, nurses, physicians and pharmacists – as well as broader initiatives throughout the state.

One high-profile effort was Formation Research, where volunteers and even members of the band passed buckets at football and basketball games to collect for OMRF. Along with scores of state high schools, Oklahoma's largest universities also took part. "If the average individual contribution of those attending a game at OU, OSU and TU were only a quarter

(the price of a pack of cigarettes), it would amount to \$18,750 for research," read the message on the back of a 1960 football schedule for the three universities. "Of course, contributions of any amount, \$20.00 bills, \$10.00 or dollar bills would be even more effective."

These sorts of campaigns didn't raise large amounts of money, but they did raise the foundation's profile. So did public service announcements by celebrities, a list that ultimately included Lloyd and Beau Bridges, Larry Hagman, James Garner and Leonard Nimoy.

Over time, these efforts strengthened OMRF's funding base. Still, the late 1960s saw a major drop-off in competitive grants, followed by the resignation of OMRF's longtime research director. As the decade drew to a close, OMRF's prospects mirrored those of a country mired in the Vietnam War and civil unrest: uncertain at best.



An estimated 450 farmers from 34 Oklahoma counties donated the proceeds from the sales of 9,000 bushels of wheat to OMRF. The wheat campaign continued throughout the 1960s, one of many grassroots initiatives that have helped OMRF forge bonds with Oklahoma's rural communities.

## ‘For the benefit of all mankind’

“In the interest of creating new medical knowledge through the efforts of the scientists of the Oklahoma Medical Research Foundation for the benefit of all mankind, regardless of age, creed or color, I join with all others in the business and professional fields in lending my aid.

This grain of wheat reminds me of the endeavor of all of us who grow wheat to provide for this year's harvest, to give as many bushels as we possibly can for the Oklahoma Medical Research Foundation. When my wheat is harvested, I will deliver 200 bushels to a public grain elevator for the account of the Oklahoma Medical Research Foundation.”

*1961 pledge signed by Oklahoma wheat farmers*

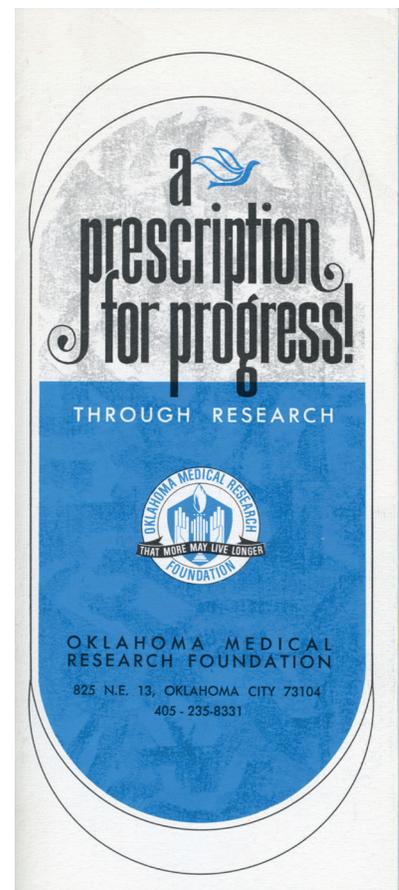


### Make Room for Danny

Entertainer Danny Thomas, right, visited OMRF's research hospital in 1968. Like St. Jude Children's Research Hospital in Memphis, which Thomas founded in the 1950s, OMRF's research hospital was devoted to caring for gravely ill children who had run short of therapeutic options, providing them with experimental treatments not widely available. But when the changing healthcare landscape put an end to small, in-patient facilities, OMRF closed the 16-bed hospital in 1976.



The Ladies Auxiliary to the Veterans of Foreign Wars began giving to OMRF in the '60s. Their gifts, which have continued for 60 straight years, now total more than \$150,000 for cancer research at OMRF.



# THE 1970S

## Finding Firm Footing



Paul Harvey, left, visits with OMRF President Colin MacLeod in 1971. The Oklahoma County Farm Bureau sponsored an evening with the Tulsa-born radio personality to raise funds for OMRF.



Twenty-six years after he co-authored a paper identifying DNA as the “transforming principle” that determines specific characteristics in the course of human reproduction, Dr. Colin MacLeod became OMRF’s first full-time president in 1970. Up until that time, representatives from OMRF’s board of directors – who also held day jobs as businesspeople and attorneys – served as president, while day-to-day management of the foundation fell to administrative staff and a research director. However, with OMRF now grown to 300 employees, the time was right to shift to a different model.

A former scientific advisor to both Presidents John F. Kennedy and Lyndon B. Johnson, MacLeod brought a resumé the likes of which Oklahoma had never seen. His seminal work on DNA came in 1944, paving the way for Drs. James Watson and Francis Crick to identify the molecule’s structure nine years later. The journal *Nature* and many others contended MacLeod should have shared in Watson and Crick’s subsequent Nobel Prize, but MacLeod shrugged off the slight. “You know, they make too big a fuss out of that,” he once told a young colleague at OMRF. “The most important thing is we did the work right.”

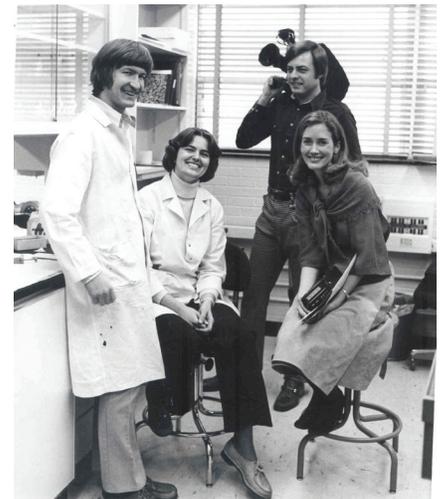
Unfortunately, only 18 months into his tenure at OMRF, MacLeod died, suffering a heart attack while traveling on foundation business. Still, his leadership and scientific profile helped lay the groundwork for success and stability at OMRF in the ensuing decade.

Another key factor to setting the foundation on a sustainable path were watershed donations from James and Leta Chapman of Tulsa. When Leta died in 1973, it triggered

annual distributions to OMRF from the last of a trio of perpetual trusts the couple had established for the benefit of the foundation and a handful of other charities. As of 2021, payments to OMRF from those trusts totaled more than \$300 million.

In 1978, NASA selected Dr. Shannon Lucid, then a post-doctoral researcher at OMRF, as a member of its first class of female astronauts in the space shuttle program. Seven years later, she became the sixth woman to reach space, where she’d ultimately log 5,354 hours, a mark that stood for American astronauts until 2007. As a mission specialist, Lucid performed experiments of all kinds. One carried particular echoes of her earthbound days at the foundation.

“On the Columbia, we had 48 rats to tend, and I worked with them every day,” she remembered. She was “a natural for the task,” she said. “I had the experience of doing similar work in the lab at OMRF.”

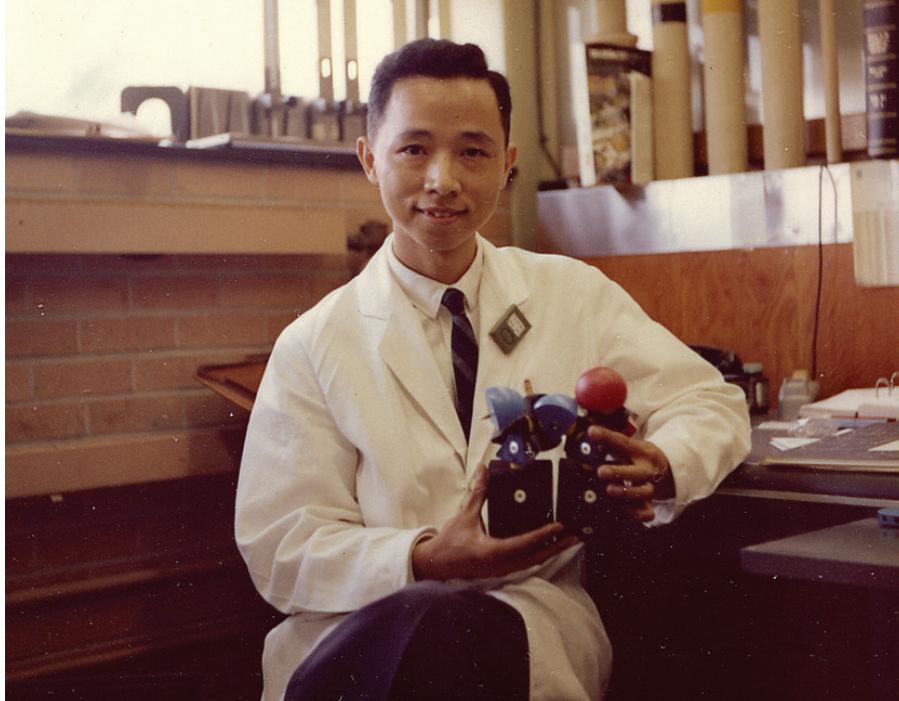


NASA selected OMRF’s Dr. Shannon Lucid, second from left, to become part of the first class of female astronauts in its space shuttle program.

# Year 'Round TOURS



OKLAHOMA  
MEDICAL  
RESEARCH  
FOUNDATION  
825 Northeast 13th  
Oklahoma City, Oklahoma 73104



In 1973, Dr. Jordan Tang discovered the chemical sequence of pepsin, an enzyme in the stomach that digests proteins in food. He began the project in 1966.

## ‘I have finished! I have finished!’

“I jumped out of bed, put on my clothes, and drove to my lab. It was 7:00 when I started to calculate all the data again. By 10:00, I knew I had finally finished. After seven years of working on this project, it was a wonderful feeling. In the whole world, I was the only person who knew the amino acid sequence of the stomach acid pepsin.

I put away my things and started to go home. It was Sunday morning. The hallways were dark, and the building seemed deserted. As I came to the lobby, the head nurse of the OMRF hospital came out from the east wing.

I had seen her a few times and did not know her name. But she was the first human being I saw after I had finished the project. In a moment of excitement, I yelled to her, ‘I have finished! I have finished!’

Then I gave her a hug and ran out of the building.”

*Dr. Jordan Tang, 2019*

*Condensed from his autobiography, “Searching for Rainbows”*



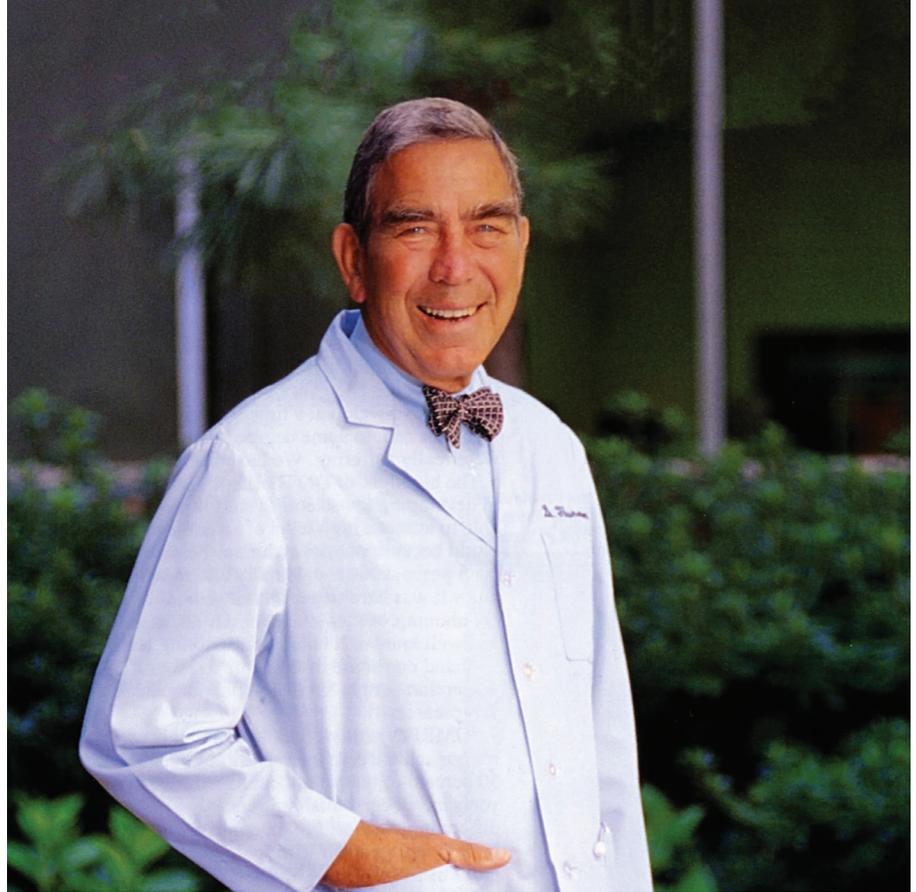
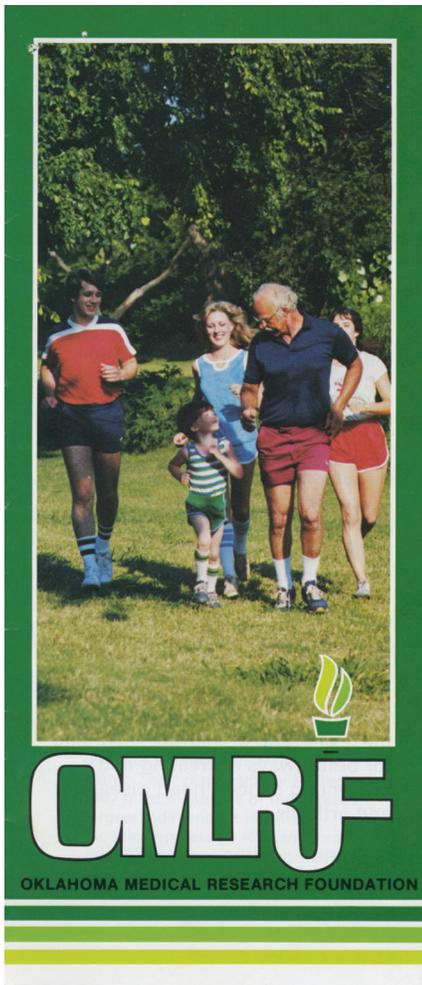
Putnam City cheerleaders celebrate the 1975 launch of the district’s annual cancer drive.

## School of Give

In the mid-1970s, cancer took a heavy toll on the faculty at Putnam City High School, killing four teachers in a single year. Remembering the coin-collection drives from her youth that helped eradicate polio, journalism teacher Lois Thomas kicked off a similar effort to fund cancer research in Oklahoma in 1975. When local charities got wind of the drive, they deluged Thomas with phone calls, hoping to benefit. “The Oklahoma Medical Research Foundation pledged that all funds would go to research,” Thomas recalled. “That’s why every penny we’ve collected has gone to OMRF.” In the 46 years since, through fundraisers ranging from bake sales to 5K races and carnivals, the students and staff of Putnam City Schools have raised \$3.7 million for cancer research at OMRF.

the  
**1980s**

## A Time of Growth



**W**hen Dr. William Thurman, above, took the helm of OMRF, he brought the lab coat he'd worn since his days training as a pediatric oncologist. That powder-blue garment, along with the bow ties he favored, would become synonymous with OMRF throughout the 1980s (and most of the 1990s). But his sartorial flourishes would prove the least of his many legacies at OMRF.

He immediately set to work building the foundation's scientific programs. He first focused on cancer research, a rapidly emerging field in which OMRF's presence had diminished. Dr. Paul Kincade, who then ran a thriving cancer research lab at Memorial Sloan-Kettering Cancer Center, was one of Thurman's first targets. "After a single visit to OMRF, my lab staff was ready to leave New York and move to Oklahoma. And that's what we did," recalled Kincade, who would go on to build and lead an internationally recognized program in Immunobiology and Cancer for three decades at OMRF.

Sensing that autoimmune diseases were another area of increasing need, Thurman recruited Dr. Morris Reichlin from the State University of New York at Buffalo to start a

new research program in 1981. Today, that program, now known as Arthritis and Clinical Immunology, is one of the nation's leaders in the field. For its research on diseases that include lupus, rheumatoid arthritis, osteoarthritis and multiple sclerosis, it has three times earned recognition from the National Institutes of Health as one of only 10 Autoimmunity Centers of Excellence.

Thurman's ability to identify and cultivate scientific talent paid similar dividends in cardiovascular biology, where he brought in Drs. Charles Esmon, Fletcher Taylor and Rod McEver. All would go on to make watershed contributions to the field, and their discoveries would later also lead to life-changing therapies for patients.

As OMRF's research thrived, the foundation expanded markedly, adding new buildings and increasing its research budget. "One of the things I've liked best about this job has been the opportunity to see OMRF grow from relative infancy to become a mature center of research excellence," Thurman told *The Oklahoman* upon his retirement in 1997. "It's also been a real pleasure to see research translate from our laboratories and become actual treatments for human disease."



Before he became a preeminent cardiovascular biologist, Dr. Fletcher Taylor, pictured here with a group of Fleming Scholars in 1986, envisioned life as a concert pianist and trained under virtuoso Sergei Rachmaninoff.



### Going Deep

As part of a nationwide effort, OMRF screened 49,000 men across the Sooner State for a long-term study to see if lowering cholesterol through diet or drugs could reduce heart attack risk. Although Barry Switzer, shown here donating blood, gave it his best shot, the legendary University of Oklahoma football coach wasn't chosen to participate. But 300 other Oklahoma men with high cholesterol levels were. For a decade, they were placed on cholesterol-lowering diets or drugs while OMRF researchers monitored their health.

Since the Sir Alexander Fleming Scholar Program began in 1956, more than 600 Oklahoma high school and college students have received an introduction to biomedical research by spending a summer in OMRF's labs. Both OMRF Vice President of Clinical Affairs Dr. Judith James, pictured, and OMRF Vice President of Research Dr. Rod McEver kicked off their scientific careers as Fleming Scholars.

## 'I chose OMRF.'

"I was bound and determined to find a way to do chemistry experiments with spiders. I found a professor at Oklahoma State who worked with *Brachypelma* [the technical name of tarantulas]. I packed the spiders into my makeup case and drove to Stillwater in my Pontiac Firebird and learned how to milk a tarantula. I thought if I could isolate the venom, I could do something chemistry-ish.

I put the spiders in a shoebox-sized plastic cage and knocked them out with dry ice and ether. I used a hollowed-out sponge to rest them on their backs, then secured them with Velcro from a pair of kids' sneakers. After applying electrical current at the base of their fangs, I'd catch the venom in a capillary tube.

I used chromatography to separate venom toxin into different components. I studied some of them for nerve regeneration.

I applied for OMRF's Fleming Scholar Program that year, and I told this story during my interview. I was accepted. But I also had the opportunity to go and be a great tarantula hunter in Honduras that summer.

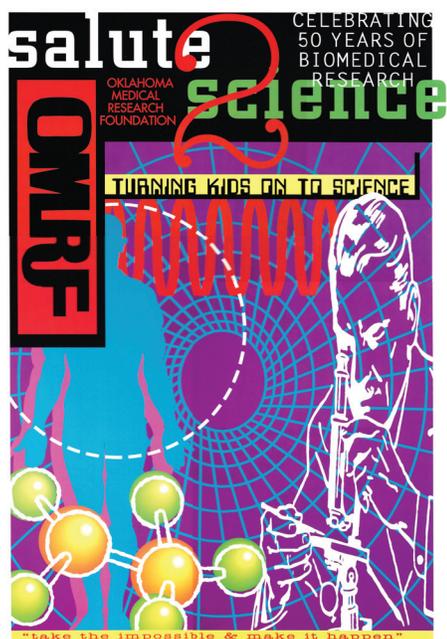
I chose OMRF. And I've never left."

*Dr. Judith James  
Sir Alexander Fleming Scholar, 1988  
Now OMRF's Vice President of Clinical Affairs  
Condensed from a 2016 interview*



Dr. Robert Floyd received eight patents in the '90s. Clinical development continues even today for one of those discoveries, a novel treatment for a deadly brain cancer.

## Making a Mark



A patent provides its owner with an exclusive right to a new invention. And beginning in the 1990s, the U.S. Patent and Trademark Office granted a multitude to OMRF, sometimes more than a dozen in a single year.

Only a decade earlier did Congress give OMRF and others the right to patent inventions that stemmed from federally funded research grants. But unlike many institutions, OMRF quickly recognized the potential for technology transfer, the process for patenting and licensing discoveries to commercial partners. As a result, three patents granted to OMRF in the early 1990s would go on to become FDA-approved drugs.

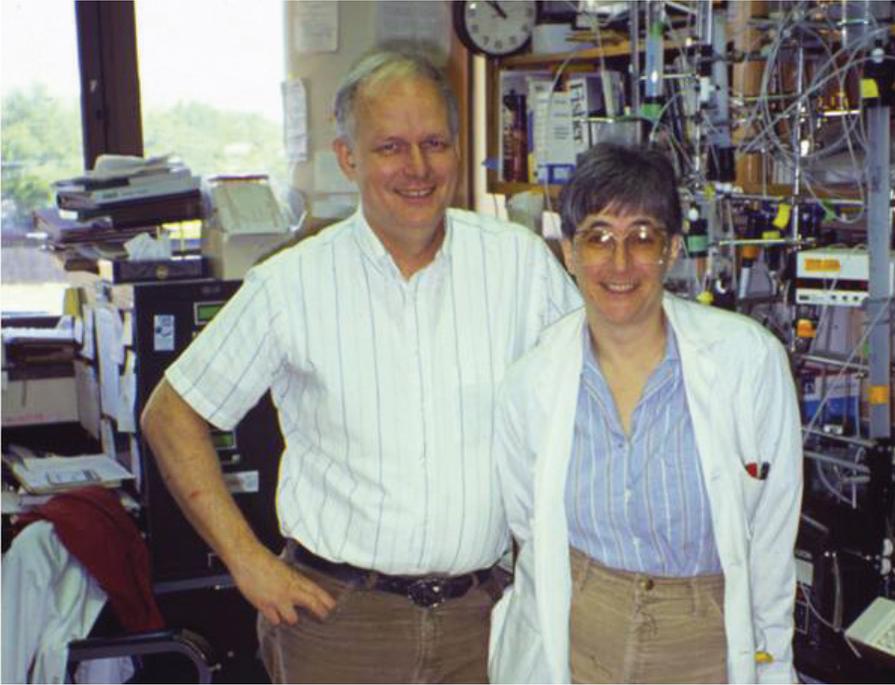
The first was Xigris, a treatment for severe sepsis developed by Drs. Charles Esmon and Fletcher Taylor. Although Eli Lilly and Company ultimately removed the drug from the market a decade after its approval, it remains the only treatment ever green-lit by the Food and Drug Administration for the leading killer in America's intensive care units. "For people where nothing else that you were doing was working, that is the one thing I could say turned the corner for them," said a critical care specialist who used the drug to treat patients with sepsis, which kills one-third of those who develop the blood infection. "I'm absolutely certain it made a difference."

Esmon's work at OMRF also gave birth to Captopril, which treats

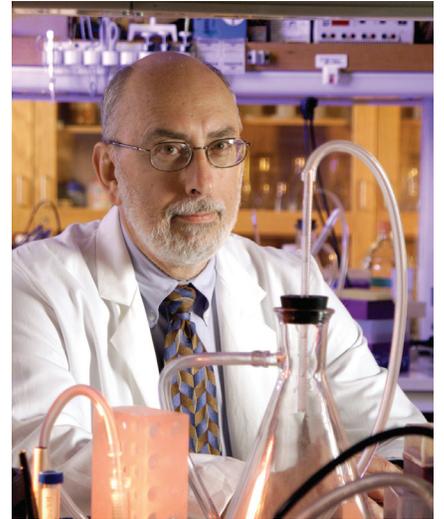
children and adults with a life-threatening protein deficiency in their blood. The drug would also break ground as the first ever approved under the European Union's centralized licensing procedure.

Finally, the research of Drs. Peter Sims and Therese Wiedmer created Soliris, which became the first and only treatment for a rare and potentially fatal blood disorder known as PNH. "Soliris didn't just save my life — it gave me back the energy to live it," said Sandy Roark, a patient with PNH from Shawnee. "I'm a new person." Recently, the drug was also approved for the treatment of neuromyelitis optica, a rare, debilitating cousin of multiple sclerosis.

However, not all of OMRF's life-changing discoveries from the 1990s came from patented work. Dr. Jordan Tang's insights provided pharmaceutical companies with a key element in overcoming drug resistance in treatments for HIV/AIDS. Thanks in no small part to Tang's contributions, drugmakers developed powerful protease inhibitors that transformed the therapeutic landscape for patients. When taken in combination with other antiretroviral drugs, protease inhibitors have added decades to the lives of people with HIV/AIDS, decreasing viral loads to undetectable levels and allowing patients to effectively manage and live with the disease.



The pioneering blood research of husband-and-wife team Drs. Charles and Naomi Esmon wasn't always glamorous.



OMRF welcomed Dr. J. Donald Capra as its fourth full-time president in 1997. The immunologist and physician-scientist played a key role in expanding the foundation's portfolio of federal research grants.

## 'You'd look like Dracula'

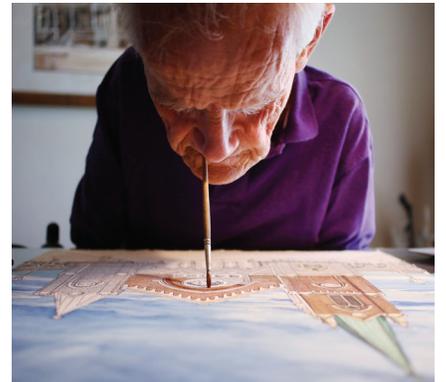
"Naomi and I had already been collecting cow blood for our experiments in the slaughterhouses when we were in St. Louis, and the stockyards were one of the reasons we decided to come to Oklahoma City.

Once we got here, we made an arrangement with Wilson Meats. We'd collect about 100 gallons of blood from their slaughterhouse every two weeks. You hold a bucket under the cows when they're being euthanized. Then you put anticoagulant in the bucket and stir it with your hand. You'd look like Dracula if it clotted on your fingers.

We were collecting blood in 10-gallon cans, and we had to haul them out of there. We carried them up the steps from the kill floor. They wouldn't let us park where the employees were, so we had to walk a half-mile or so.

Using that cow blood, we figured out how to purify protein C. And that ultimately led to the development of two drugs: Xigris and Ceprotran."

*Dr. Charles Esmon  
Condensed from a 2014 interview*



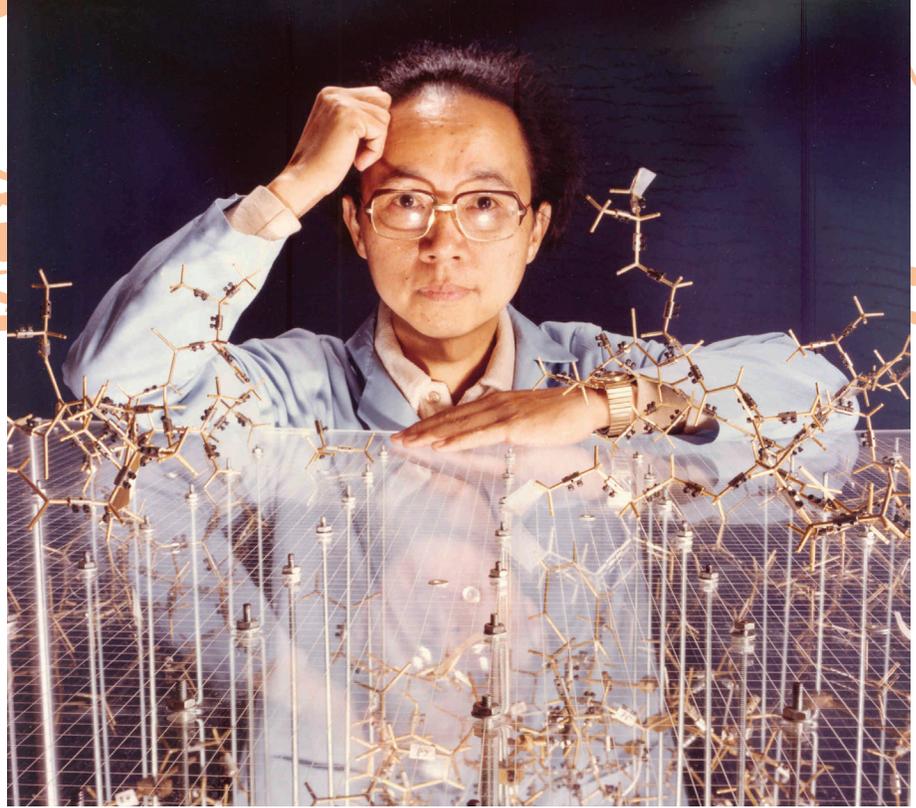
Oklahoma artist Greg Burns created original art for OMRF's holiday card campaign throughout the '90s. Born with a muscle and joint disease that affects the use of his arms, Burns holds a brush in his teeth to paint his intricate watercolors.



## A Treasure Trove for Lupus Research

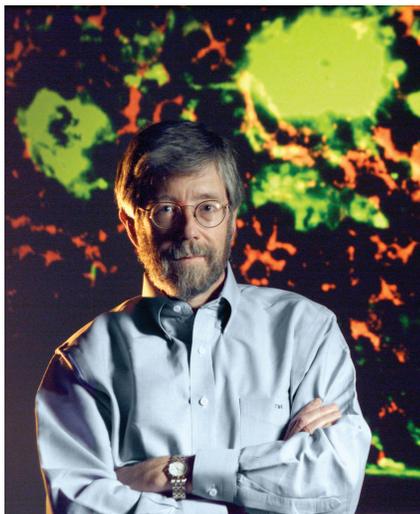
In 1995, in the research program built by Dr. Morris Reichlin, left, OMRF established the Lupus Family Registry and Repository to collect and share data and information from families where more than one member has lupus. And beginning in 1999, the project focused on identifying the genes responsible for lupus in African Americans. Now part of the Oklahoma Rheumatic Disease Research Cores Center, the repository contains biological samples from thousands of patients with lupus. Scientists around the world have used the repository to produce hundreds of peer-reviewed studies, which have improved understanding and treatment of the chronic autoimmune illness that primarily strikes women during their child-bearing years.

# THE 2000s



## Eureka Moments

When OMRF researchers reported in The New England Journal of Medicine that proteins associated with lupus appear in the blood before clinical symptoms of the disease set in, the findings garnered a major story in The New York Times.



“Whether it’s access to cutting-edge equipment for genetics or the chance to collaborate and learn from more established researchers,” said Dr. Paul Kincade, who served as a mentor for many junior researchers supported by Center of Biomedical Research Excellence grants, “we are focused on providing our scientists with the resources they need to succeed.”

The new millennium began with a bang at OMRF, as Dr. Jordan Tang, above, and his research team identified and cloned the enzyme believed to cause Alzheimer’s disease. Soon after, the OMRF scientists designed an inhibitor that stopped the enzyme in its tracks.

The discoveries led to the development of an experimental drug acquired by the Japanese pharmaceutical giant Astellas. Although the company ultimately halted human trials due to safety concerns, Tang’s work helped deepen researchers’ understanding of the deadly, memory-robbing disease. “The job of scientists is to make discoveries and publish those findings,” he said. “We’ve done that. We’ve done our job.”

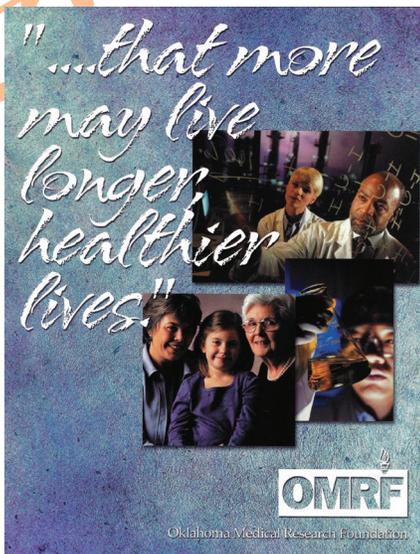
Meanwhile, Drs. John Harley, Judith James and Hal Scofield discovered that most patients who develop lupus actually display certain proteins in the blood — known as autoantibodies — years before manifesting clinical symptoms. Published in 2003 in The New England Journal of Medicine, the work “made a very big splash in the lupus world,” said the director of the division of rheumatology at New York University. The idea that a blood test could act as a sort of crystal

ball for disease, she said, “was quite powerful.” In the years since, as a signal of the work’s influence in the field, the paper has been cited more than 1,000 times.

The 2000s also saw the rise of a new grant called a COBRE (Center of Biomedical Research Excellence) at OMRF. Dr. J. Donald Capra, who succeeded Dr. William Thurman as OMRF’s president, worked closely with U.S. congressional leaders to shape the National Institutes of Health initiative, designed to strengthen biomedical research in states without the infrastructure and resources of traditional scientific powerhouses such as Massachusetts and California.

“This is yet another important step in the emergence of Oklahoma as a center of biomedical excellence,” said Capra following the award of OMRF’s second COBRE (and Oklahoma’s third) in 2003. “Five years ago, this state had never seen a \$10 million NIH grant. And now we have three.”

Under Dr. Stephen Prescott, who succeeded Capra as president in 2006, that record of success would continue. OMRF recently secured its fifth COBRE, with collective funding from those grants totaling more than \$100 million. The funds have helped launch the career of more than two dozen principal scientists at OMRF.

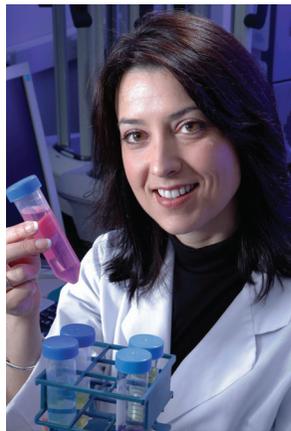


## Extra Credit

Since 2005, the Oklahoma Biomedical Research Tax Credit has rewarded donors who give to OMRF. For every dollar Oklahomans donate to the foundation (up to certain limits), they receive a state tax credit of 50 cents. The unique program has proved a win-win, boosting giving to medical research while saving Oklahomans precious dollars.



The Foundation Scholars program welcomed science teachers from around the state to work alongside OMRF scientists in their labs. At the program's end, teachers were equipped with a computer for their classroom to "reach the internet and communicate by e-mail."



OMRF welcomed nine new researchers in 2008. This "next generation" class of scientists included Dr. Courtney Montgomery, left, who studies a rare disease called sarcoidosis, and Dr. Courtney Griffin, right, whose research focuses on blood vessel development.



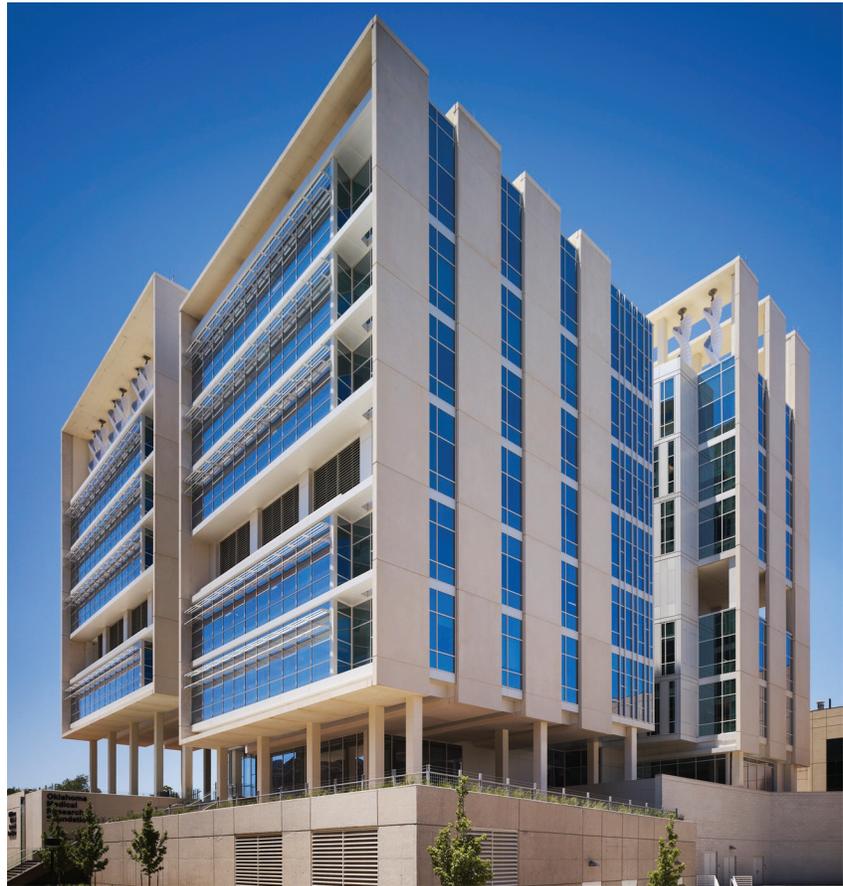
Dr. Stephen Prescott joined OMRF from the Huntsman Cancer Institute in Salt Lake City in 2006. He became the foundation's fifth full-time president.

## 'I did not come here to be a caretaker'

"I have absolutely no interest in doing the same job I've done before. I did not come here to be a caretaker of an outstanding organization. I came to OMRF because I saw an organization that could make a difference in people's lives, in human health.

To keep pace, we need to add new investigators. We need to expand our laboratories. And we need to build our strength in traditional research, taking fundamental discoveries and converting them into something practical that can help people."

*Dr. Stephen Prescott*  
Condensed from a 2006 interview



In 2011, OMRF completed the largest campus expansion in the foundation’s history. With the construction of a new research tower, OMRF added 186,000 square feet of research and clinical space to its research campus.

Funded through a combination of private gifts and state and federal grants, the facility houses dozens of laboratories, an imaging and microscopy suite, the Samuel Roberts Noble Cardiovascular Institute, and the OMRF Multiple Sclerosis Center of Excellence. “This tower represents a perfect example of the innovation and determination of the brightest minds in our state, pulling together to produce great results and major dividends,” said then-U.S. Rep. James Lankford, who, along with Gov. Mary Fallin, spoke at the dedication.

Crowned by 18 vertical wind turbines, the energy-efficient facility received LEED Gold certification

and was a finalist for the Renewable Energy World North America Award. It also won the S-Lab Award (“safe, successful, sustainable”) for best new research laboratory.

A portion of the funding for the turbines came from the Puterbaugh Foundation, established by Oklahoma coal magnate J.G. Puterbaugh, who was also one of OMRF’s early leaders. “Mr. Puterbaugh would love it,” said Oklahoma Supreme Court Justice Steven Taylor, chair of the Puterbaugh Foundation. “Knowing his coal money was being used to finance wind turbines would make him smile.”

Most importantly, the building served as the centerpiece for building OMRF’s research and clinical operations. As part of the expansion, OMRF recruited more than two dozen new scientists to the foundation, with many establishing their labs in the tower. In the MS Center,

physicians now care for more than 2,000 patients, who also participate in clinical trials and research projects that contribute to a deeper understanding of multiple sclerosis.

The decade also saw OMRF discoveries continue to make their way into hospitals and clinics. In 2010, physicians across the U.S. began using Vectra DA, an OMRF-based disease management test for rheumatoid arthritis patients. And in 2019, the FDA approved Adakveo as the first treatment for the pain crises that strike patients with sickle cell disease. The drug is based on discoveries made by OMRF’s Dr. Rod McEver. “We know this drug can decrease the frequency of sickle cell pain crises in a significant and clinically meaningful way,” said the physician who led the drug’s clinical trials. “This is an important advancement for people living with this very difficult condition.”



## Rockin' for Research

Beginning in 2012, OMRF's "241" (two events for one great cause) has brought musical headliners to OMRF to raise money for research. Among the performers have been Vince Gill, Charlie Daniels and Alice Cooper. The events have generated more than \$5 million to support OMRF's scientists.



Dr. Gabriel Pardo, above, leads OMRF's Multiple Sclerosis Center of Excellence. Opened in 2011, it is the only comprehensive facility in the state for patients like Shan Carter, below.



Discoveries made by Dr. Rod McEver led to Adakveo, the first targeted therapy approved for the treatment of sickle cell disease. The drug is now available in 44 countries to treat patients like Mary Long, a member of OMRF's housekeeping staff, who lives with the condition.

## 'Their suffering is extreme'

"It's enormously satisfying to know you've developed a drug that helps patients. As a researcher, you just try to do good science and look for how what you learn might be applied to human disease.

Sickle cell is a terrible disease. I've treated sickle cell patients, and their suffering is extreme. They have a lot of disability. Their pain is horrible. Their ability to function is significantly impaired. And there's stigma for a lot of patients, even among health care people. 'Do you really need more pain meds?'

But the disease is real. The organ damage is real. The pain is real. If this drug can have a significant reduction in pain and disability, that would be a major step forward."

*Dr. Rod McEver  
Condensed from a 2019 interview*

# THE 2020s

## A Promising Future



Scientific productivity remained high at OMRF despite the Covid-19 pandemic: In 2020, competitive grant funding, patent disclosures and scientific publications all met or exceeded 2019 levels.

**O**kay. We still have a ways to go in this decade. But even in spite of the pandemic, the 2020s are off to a strong start at OMRF.

Dr. Lijun Xia published groundbreaking new research in the journal *Science* and secured a new \$13.1 million grant from the National Institutes of Health. Dr. Courtney Griffin also made waves with her work on vascular development in the eye that could give way to reversing vision loss in premature babies and adults living with diabetes.

In partnership with the University of Oklahoma Health Sciences Center and the Veterans Administration Medical Center, OMRF successfully renewed its Nathan Shock Center for Excellence in the Basic Biology of Aging grant with the National Institutes of Health. With this five-year award, Oklahoma is home to one of only eight Shock Centers in

the nation, where researchers study the ways in which growing older leaves us prone to illness.

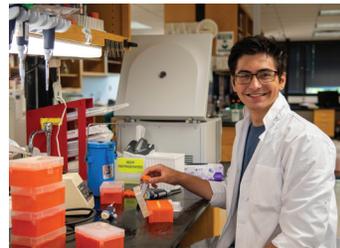
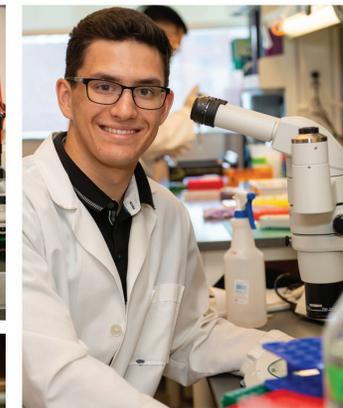
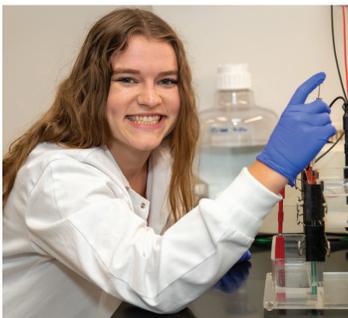
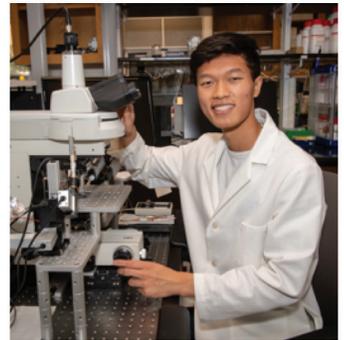
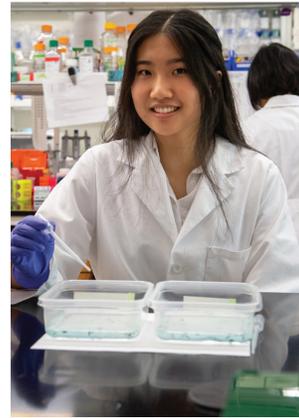
Similarly, we've renewed our Autoimmunity Center of Excellence designation from the NIH, joining a short list that includes the University of Pennsylvania, the University of Chicago and Weill Cornell Medical College. Between our two clinics, the Multiple Sclerosis Center of Excellence and the Rheumatology Research Center of Excellence, care providers are now conducting 6,000 visits each year with patients who live with MS, lupus, rheumatoid arthritis and other challenging autoimmune diseases.

In partnership with Langston University, Oklahoma's only historically Black college or university, OMRF launched the Langston University Biomedical Research Scholars Program. The first of its kind in the state, the

program aims to meld summer research internships with long-term mentoring to support students of color pursuing STEM degrees.

"In a typical internship, you might learn a few exciting things, but at the end of the summer, the research project for the student comes to an end," said Dr. Byron Quinn, chair of Langston's biology department. "Here, we've tried to build something more permanent – long-term relationships between LU students and OMRF mentors that will last years, not months."

Whether education, research or clinical care, everything we do at OMRF is focused on the future. Will all of it work out? Of course not. But if our first 75 years are any indicator, quite a bit will. And that should make for exciting developments in the coming years – and good reading come our 100th birthday!



With the addition of the Langston University Biomedical Research Scholars Program, OMRF welcomed its largest class of summer research scholars ever in 2021. A total of 21 undergraduate students participated in OMRF's Fleming, Langston and Saxon programs.

## LEGACY

# Remembering Dr. Stephen M. Prescott

Feb. 22, 1948 - May 28, 2021

**D**r. Stephen Prescott came to OMRF with impeccable credentials. A physician-researcher, he'd enjoyed a stellar career in the laboratory before pivoting to administration, where he'd led a prestigious cancer institute. There was, says OMRF Board Chair Len Cason, only one slight blemish on his resume: "He was a Texan."

Still, when it came time to interview candidates to become OMRF's president, even Prescott's Lone Star lineage couldn't hold him back. "Steve said, 'Why don't you run through your list and talk to me after you've identified your lead candidates,'" remembers Cason. "And I said, 'Steve, I have a list of candidates, but, honestly, I don't have a runner-up to you.'"

Prescott knew OMRF through Dr. Rod McEver, now OMRF's vice president of research, with whom he shared his first research fellowship in the 1970s and continued to collaborate scientifically throughout his career. Prescott also served as an external scientific advisor to OMRF. "He was very impressed with everybody," recalls his wife, Susan. "The more people he met, the more convinced he became that OMRF was the right place."

When Cason offered him the job, Prescott didn't hesitate. "He interviewed in other places, but Oklahoma felt so familiar," says Susan. "It was like coming home."

Growing up, home had been College Station, Texas. Although Prescott's father was a biochemistry professor, science wasn't his first love. "I spent way too much of my life dreaming of being a major league baseball player," he remembered in an interview with Findings.

When college curveballs put an end to that fantasy during his freshman year at Texas A&M University, the one-time outfielder decided to redirect his energy into pre-med classes. After an honors degree at A&M, he headed to the Baylor



College of Medicine, where he also graduated with honors. A residency in internal medicine at the University of Utah and a post-doctoral fellowship at Washington University in St. Louis followed.

It was in St. Louis that Dr. Prescott cut his teeth as a medical researcher. "I'm innately curious, and I like to understand how things work," he said. "So, I knew I wanted to have a career in research."

Prescott joined the faculty at the University of Utah, where he enjoyed an eminent career in the lab. The underlying theme of his research was understanding how blood vessels behave. The field didn't have a name when Prescott began his research career, but by the early 1990s, scientists had coined the term "vascular biology" to describe this emerging discipline.

The work had implications for heart disease, but it also touched a number of different areas. His

research led to the development of Cox-2 inhibitors, the anti-inflammatory drugs now used to treat severe arthritis. And it led him into cancer research, searching for new ways to stop tumor growth. Appointments as the senior director for research and, ultimately, executive director of the university's Huntsman Cancer Institute followed.

Prescott became OMRF's fifth full-time president in 2006. Over the next decade and a half, he took the foundation to new heights. He orchestrated the largest campus expansion in OMRF history, raising \$100 million to construct a new research tower. It houses the state's only comprehensive multiple sclerosis treatment center and a variety of state-of-the-art labs, including one that bears Prescott's name, thanks to the generosity of the Puterbaugh Foundation.

During his time at the helm, Prescott recruited more than 40 new principal investigators to the foundation, and three drugs and a diagnostic test born in OMRF labs reached the market. The Foundation also repeatedly earned top marks from Charity Navigator, the nation's leading nonprofit evaluator, and in rankings of Oklahoma's top workplaces.

As with his research – 270 articles cited nearly 40,000 times – his leadership earned him numerous plaudits. Among those honors were Oklahoma's Most Admired CEO, the Hall of Fame Leadership Award from the OK Bioscience Association, and, finally, induction into the Oklahoma Hall of Fame. Not bad, Prescott would have joked, for a recovered Texan.

"He led us to another level," says McEver. "Under Steve, OMRF has unquestionably increased its stature and recognition among scientists across the world."

In April, Prescott announced his retirement. "I've been lucky enough to help guide this wonderful institution for 15 years," he said. "And nothing makes me happier than



knowing the scientists of OMRF will continue the tradition of biomedical research excellence long after I've gone." OMRF's board named longtime Senior Vice President and General Counsel Adam Cohen interim president, and the board is now leading a search for Prescott's permanent successor.

Since being diagnosed with urothelial cancer in 2017, Prescott had been open about his struggles with the disease. While the treatments proved debilitating at times, he showed remarkable resiliency and positivity in the face of odds that grew increasingly long. When his therapeutic regimen necessitated a portable chemotherapy pump, Prescott simply stuck the device in a backpack that

he wore to the office, board meetings and even the many outward-facing events his position at OMRF demanded. "Not once did I hear him say, 'Why me?' or feel sorry for himself," says Cason.

Prescott acknowledged that his cancer journey gave him a fresh appreciation for research. "It's driven home why it's so important to keep searching for new approaches to treat disease," he wrote in 2019. But, he said, the most "wonderful" part of having cancer was the support that so many people showed to him and his family.

During the final year of his life, even as his health plummeted, Prescott added a new role: Covid-19 educator. He spent countless hours working with television stations,

newspapers and other audiences, teaching the public about the novel coronavirus. His goal, he often said, was to distill scientific fact from fiction. "He was Oklahoma's Dr. Fauci when we all needed someone we could trust," says Scott Meacham, president and CEO of i2E. "He was the calm voice of reason."

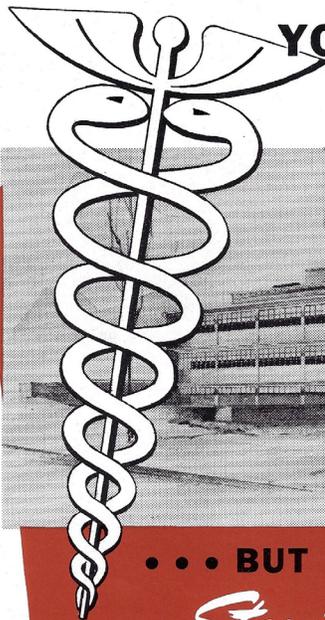
Prescott is survived by Susan, his wife of 52 years; his brother, Don; his children, John and Allison; and his granddaughters, Ruby, Lily and Isabella (all three of whom he liked to describe as "perfect"). "Steve can never be replaced," says Meacham, speaking for himself and countless others, "only cherished for what he left behind." - AC

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